

CLAIMS

1. A method for cutting/shaping a rubber strip into rubber band members, comprising the steps of:

providing an anvil having a flat shaping surface with an anvil groove that extends in the width direction of a rubber strip to be placed thereon;

5 providing a press cutter/shaper opposite to the anvil, said press cutter/shaper comprising a pair of inclined shaping surfaces on front and rear sides, each being inclined with a relatively small angle relative to the shaping surface of the anvil so that the front and rear shaping surfaces of the press cutter/shaper intersect each other with a predetermined intersection angle, and a cutting blade arranged between the front and rear shaping surfaces of the press cutter/shaper and protruding therefrom toward the anvil groove, said cutting blade having a blade angle defined by front and rear surfaces of the cutting blade, said blade angle being smaller than said intersection angle of the shaping surfaces of the press cutter/shaper;

10 placing a rubber strip onto the anvil;

15 heating the press cutter/shaper to a predetermined temperature; and

moving the press cutter/shaper toward the anvil so that the cutting blade is forced into anvil groove while cutting the rubber strip at a predetermined cut position in its longitudinal direction to form a rubber band member, with a trailing end of the rubber band member and a leading end of the remaining rubber strip being clamped between the front and rear shaping surfaces of the press cutter/shaper and the flat shaping surface of the anvil, respectively, and thereby deformed and shaped to have a cross-section with a thickness which decreases gradually toward said cut position.

20 2. A method according to claim 1, wherein at least one of the front surface and rear surface of the cutting blade is pressed against corresponding edge of the anvil groove so as to cut the rubber strip at a predetermined cut position.

25 3. A method according to claim 2, wherein both the front and rear surfaces of the cutting blade are pressed against respective edges of the anvil groove so as to cut the rubber strip at two predetermined cut positions.

30 4. A method according to claim 3, wherein the anvil groove has a V-shaped cross-section, having a groove wall intersection angle between front and rear walls of the anvil groove, said groove wall intersection angle being approximately same as said blade angle of the cutting blade.

5. A method according to claim 1, wherein said rubber strip has reinforcement cords embedded therein.

6. A method according to claim 5, wherein said rubber strip is a stretch of inner liner in which chafers with reinforcement cords embedded therein are applied to side edges of the inner liner.

7. An apparatus for cutting/shaping a rubber strip into rubber band members, comprising:

an anvil having a flat shaping surface with an anvil groove that extends in the width direction of a rubber strip to be placed thereon;

10 a press cutter/shaper arranged opposite to the anvil, said press cutter/shaper comprising a pair of inclined shaping surfaces on front and rear sides, each being inclined with a relatively small angle relative to the shaping surface of the anvil so that the front and rear shaping surfaces of the press cutter/shaper intersect each other with a predetermined intersection angle, and a cutting blade arranged between the 15 front and rear shaping surfaces of the press cutter/shaper and protruding therefrom toward the anvil groove, said cutting blade having a blade angle defined by front and rear surfaces of the cutting blade, said blade angle being smaller than said intersection angle of the shaping surfaces of the press cutter/shaper;

20 a heating means for heating the press cutter/shaper to a predetermined temperature; and

a moving means for moving the press cutter/shaper toward the anvil close to each other;

wherein the press cutter/shaper heated by said heating means is adapted to be moved by said moving means toward the anvil so that the cutting blade is forced into 25 anvil groove while cutting the rubber strip at a predetermined cut position in its longitudinal direction to form a rubber band member, with a trailing end of the rubber band member and a leading end of the remaining rubber strip being clamped between the front and rear shaping surfaces of the press cutter/shaper and the flat shaping surface of the anvil, respectively, and thereby deformed and shaped to have a cross-section with a thickness which decreases gradually toward said cut position.

30 8. An apparatus according to claim 7, wherein said cutting blade is arranged so that at least one of the front surface and rear surface of the cutting blade can be pressed against corresponding edge of the anvil groove so as to cut the rubber strip at

a predetermined cut position.

9. An apparatus according to claim 7, wherein said cutting blade is arranged so that both the front and rear surfaces of the cutting blade can be pressed against respective edges of the anvil groove so as to cut the rubber strip at two predetermined cut positions.

10. An apparatus according to claim 7, wherein said cutting blade has a maximum thickness that is slightly larger than a width of said anvil groove.

11. An apparatus according to claim 7, wherein said rubber strip has reinforcement cords embedded therein.

10 12. An apparatus according to claim 11, wherein said rubber strip is a stretch of inner liner in which chafers with reinforcement cords embedded therein are applied to side edges of the inner liner.